

CITY OF INDIANAPOLIS

Capacity Assurance, Management, Operation,
and Maintenance Program

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- 3-15 Malcolm Pirnie, Inc. 1998. Basin Master Plan.
- 3-16 Greeley and Hansen Engineers. June 1996. Combined Sewer Infrastructure Assessment, Phase I & II, City of Indianapolis, Department of Capital Asset Management.
- 3-17 Greeley and Hansen Engineers. April 1998. Combined Sewer Infrastructure Assessment, Phase III, City of Indianapolis, Department of Capital Asset Management.
- 3-18 Commonwealth Engineers, Inc., November 1994, Evaluation, Assessment & Rehabilitation of Inverted Siphons for the City of Indianapolis, Indiana.
- 3-19 GRW Engineers, Inc., February 1995, Engineering Evaluation of Four Inverted Siphon Structures. Project No. CS 032 117-ADMC. Final Report.
- 3-20 Malcolm Pirnie, February 1995, Engineering Evaluation of Five Siphons, City of Indianapolis, Department of Capital Asset Management.
- 3-21 HNTB Corporation, February 1995, Report on Engineering Evaluation of Five Siphons. Department of Capital Asset Management, Indianapolis, Indiana, Project No. CS 024 119-BLMT.
- 3-22 Lift Station Corrective Action Recommendation
- 3-23 Rust Environment and Infrastructure, December 1998, Lift Station No. 403, Fall Creek and Shadeland Avenue, Sanitary Sewer System Rehabilitation Design and Hydraulic Analysis, City of Indianapolis, Department of Capital Asset Management.
- 3-24 Indianapolis Pretreatment Program 2003 Annual Report
- 3-25 Indianapolis Sanitary District Standards for the Design and Construction of Sanitary Sewers, City of Indianapolis, Department of Public Works, Engineering Division, May 1989.
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